

VIRGINIA

Section 1: School Demographics

School Name

George C. Marshall High School

Principal's name

Jeffrey Litz

School Address

7731 Leesburg Pike
Falls Church, Virginia 22043
United States

[Map It](#)

Number of students (total enrollment)

2026

Lowest grade

9

Highest grade

12

This school is:

- A public school

Please explain:

Number of students by grade level

Elementary or lower	Middle grades	High or upper school
0	0	2026

Number (or percent) of students eligible for free or reduced lunch

Free lunch	Reduced lunch	Neither free nor reduced lunch
8.61%	8.62%	82.77%

Section 2: Background about school lunch

How many students buy lunch in the school's cafeteria?

10 to 30 percent

How many minutes do students have to eat lunch?

25

Are students allowed to eat lunch in rooms/buildings other than the cafeteria?

Yes

Are students allowed to leave campus for lunch?

No

Which students are allowed to leave campus for lunch?

Are there any times during the school year when breakfast or lunch is free to all students?

No

Please explain:

Who controls the portions and servings students receive?

Cafeteria staff portion items into servings (i.e fruit into cups) but students select items and number of servings themselves)

Please explain:

Does the school serve set meals (e.g. chicken nuggets with potatoes and carrots) or can students choose what they want from the menu?

The students can pick which sides they would like, if any

Please explain:

Are fruits/vegetables required with every meal?

Yes, fruits/vegetables are charged separately

In your teams' opinion, are students content with the meal options at school?

Yes, somewhat content

Please explain:

The food is good, but not great. Still, many people buy school lunch everyday. The school has a few, albeit limited, high quality options as well as a salad bar. Many students also buy sides to go with pre-packed meals from home.

What type of utensils do students use to eat?

Disposable utensils, such as traditional plastic

Please explain:

What type of plates/trays are used to serve the food?

Disposable paper plates or trays

Please explain:

Section 3: Food waste activities at the school

Does the school use any of the following waste reduction activities?

- Procedures put in place to reduce food loss to expiration
- Students learn ways to reduce food waste
- Offer smaller portions for students who may want less food
- Food is served in the most efficient way possible to reduce food waste
- Unopened food is recovered for afterschool or supplemental snacks

Please explain:

Has the school performed a food waste audit previously?

No, the school has discussed an audit but decided not to move forward

Please explain:

Which of the following generates the majority of food waste at your school?

Student food waste

Please explain:

On average, do you think food waste is an issue at your school?

Yes, somewhat important

Section 4: School Waste Data Form

School name

George C. Marshall High School

Date of audit

04/04/2017

Students in attendance on day of audit

1989

Numbers of lunches served on day of audit

4 lunch periods

Menu served on day of audit

All American Grill: hamburger on bun, cheeseburger on bun, turkey hot dog on bun, spicy chicken on bun, BBQ pork rib on bun, corn dog bites, sloppy joe on bun, baked chicken on bun, stuffed Philly cheesesteak sandwich, chicken tenders with brown rice

Salads: chicken caesar salad, apple cranberry salad w/ chicken, Greek chicken salad, southwestern chicken salad, chopped cheese salad

Wraps and Sandwiches: turkey and cheese on croissant, Italian vegetable wrap, Asian chicken wrap, spicy chicken wrap, PB&J sandwiches

Mexican Line: cheese quesadilla, nachos, beef soft taco

Italian Line: penne pasta with meat sauce or meatballs, garlic toast, meatball sub, chicken parmesan, ravioli, cheese calzones, cheese sticks with marinara sauce, pepperoni pizza, cheese pizza

Asian Line: orange chicken, teriyaki chicken, beef teriyaki, brown rice

Fruits: orange slices, apples, pears, grapes, bananas, applesauce

Vegetables: sweet potatoes, chili beans, celery, cucumber, carrots

Other sides: yogurt parfait, french fries, hard-boiled eggs

Drinks: water, fat-free unflavored milk, 1% unflavored milk, chocolate milk, Gatorade, fruit juice

Waste type: Unopened food

A: Type of food	B: Number of items	C: Weight of empty bin	D: Total weight	E: Net weight (Total - Empty)
Milk	15	0 lbs	9.5 lbs	9.5 lbs
Uneaten fruit	8	0 lbs	0.6 lbs	0.6 lbs
Sandwiches (pre-packed)	2	0 lbs	0.3 lbs	0.3 lbs

Total net weight of unopened food

10.4

Notes regarding unopened food

Almost all unopened food was milk from the lunch lines. Frequently, food was opened but uneaten and therefore unsalvageable.

Waste type: Food waste

A: Bin/Bag Number	B: Weight of empty bin	C: Total weight	D: Net weight (Total - Empty)	E: Picture taken of the bin? (Y/N)	F: Percent full
1	0 lbs	16.5 lbs	16.5 lbs	N	85%
2	0 lbs	8.9 lbs	8.9 lbs	N	55%
3	0 lbs	8.3 lbs	8.3 lbs	N	51%
4	0 lbs	14.6 lbs	14.6 lbs	N	75%

Total net weight of food waste

48.3

Waste type: Liquid waste

A: Bin/Bag Number	B: Weight of empty bin	C: Total weight	D: Net weight (Total - Empty)	E: Picture taken of the bin? (Y/N)	F: Percent full
1	0 lbs	11.6 lbs	11.6 lbs	N	25%
2	0 lbs	11.1 lbs	11.1 lbs	N	25%

Total net weight of liquid waste

22.7

Waste type: Recycling

A: Bin/Bag Number	B: Weight of empty bin	C: Total weight	D: Net weight (Total - Empty)	E: Picture taken of the bin? (Y/N)	F: Percent full
1	0 lbs	6.7 lbs	6.7 lbs	Y	65%
2	0 lbs	7.0 lbs	7.0 lbs	Y	70%
3	0 lbs	5.0 lbs	5.0 lbs	Y	50%
4	0 lbs	10.5 lbs	10.5 lbs	Y	95%

Total net weight of recycling

29.2

Waste type: Other (Landfill)

A: Bin/Bag Number	B: Weight of empty bin	C: Total weight	D: Net weight (Total - Empty)	E: Picture taken of the bin? (Y/N)	F: Percent full
1	0 lbs	6.0 lbs	6.0 lbs	Y	25%
2	0 lbs	21.1 lbs	21.1 lbs	N	100%
3	0 lbs	8.2 lbs	8.2 lbs	N	35%
4	0 lbs	18.9 lbs	18.9 lbs	N	90%

Total net weight of other wastes (landfill)

54.2

Notes regarding food, recycling, and other (landfill) wastes

Most waste came from lunch line food. Students who brought lunch often saved leftovers in their lunch boxes; however, students who bought lunch threw out what they did not finish. Most recycling consisted of plastic bottles and clean paper trays. Most food waste consisted of vegetables, fruit peels, and uneaten french fries. Landfill trash consisted of basically everything else including but not limited to dirty paper trays with food or sauce on them and plastic bags.

Describe the process you used to establish clear guidelines for students to follow to sort their food waste.

Before the collection day, we utilized fliers around the school and PA announcements to advertise to the student population so that they were aware of our project ahead of time. To collect waste on the collection day, we first announced to the cafeteria during each lunch that we were conducting the food waste audit to remind all the students to bring their trash to the front of the cafeteria as they finished. Additionally, we worked with the custodial staff to collect and sequester all of the trash cans in the cafeteria, thereby forcing students to bring their trash to the front of the cafeteria where we were collecting. We set up the collection station with two tables in the center front of the cafeteria. We placed all five buckets on the two tables. Each bucket had the different signs indicating different trash collection types taped atop meter sticks attached to the backs of the buckets so that all of the students could see the signs from far away. Each bag was also lined with durable trash bags, which were ultimately used to weigh the trash. When the flow of students to the trash cans got especially busy, we told students to set their trays or food on the tables surrounding the buckets so they could leave to get to class. As we were all excused from class, we used the breaks between lunches to sort through and deposit the overflow waste in the proper containers. As containers filled, we took out the trash bags and replaced them with another bag so we could continue to use the buckets instead of making students wait while one person weighed the waste in the trash bags and recorded the data. When all of the lunches finished, we put all of the trash and food waste in the trash cans and took the recycling out back to the school's recycling compactor. We also had to dispose of the liquid waste and unopened items in the trash because there was nowhere else to dispose of it and school policy prevents returning food that has already been purchased back to the lunch lines. However, all unsold food is stored in refrigerators and served again at the start of the next day.

Upload photos

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Would your team be interested in being part of the food waste panel at Nationals?

Yes

Section 5: Critical Thinking

Based on your observations during the food waste audit, make three recommendations to your School Board to reduce food waste.

1. Reduce the amount of food students are allowed to buy because students are often buying too much food that does not end up being eaten and instead ends up being thrown away.
2. Use reusable plastic trays instead of single-use paper trays because much of the trash being collected is accounted for by food trays that students get from the lunch lines.
3. Allow unopened food to return to the cafeteria to reduce waste of food that is perfectly edible.

Justify a school's role in teaching children about food waste and the impact food waste has on school budgets, the environment, and hunger in the community.

As schools are the primary channel through which children receive education, their role is the at the zenith of importance. If the school does not educate children about food waste, its impact on school budgets, and hunger in the community, then it is highly unlikely that the students will otherwise learn about it. Additionally, these issues primarily affect schools, so it should be their responsibility to bring awareness to these issues. For example, if food waste is negatively affecting school budgets, then the school is responsible for stepping in to correct these issues to enact change. Lastly, school is not just supposed to teach you how to be academic and book smart, it is also supposed to teach children how to be good, responsible citizens.

The US Environmental Protection Agency has set a goal to reduce food waste by 50% by the year 2030. Based upon your experience conducting this food waste audit, will the US meet this goal? Explain why or why not.

Based on our food waste audit experience, it is unlikely that the US Environmental Protection Agency (EPA) will meet this goal. People, especially students, just waste too much to make this goal plausible. It is definitely possible to reduce trash and recycling waste by switching to reusable containers and trays, but it is very difficult to change human behavior. That meaning that it is basically impossible to change how much people decide to eat or not. Of course, the EPA can reduce how much food goes to landfills by increasing the prevalence of composting, but the food is wasted nonetheless. As we observed with students, many people opted to just dispose of anything they did not eat, so controlling what people do or do not dispose of is extremely difficult unless literally every trash can is patrolled, which is, of course, unrealistic. The EPA can increase awareness of food waste, but it will be extremely hard to enforce change. Even in our own experience, it was hard to control where people were actually disposing of their garbage. In schools, students also have little time to actually finish their meals which contribute to the bulk of food waste. Furthermore, they are often encouraged or required to buy foods they may not eat, like vegetables, so although this encourages healthy, eating, it ultimately just contributes more to the food waste problem when students buy the food they do not want to eat and end up throwing away. Therefore, the US EPA will most likely not completely its goal because it is hard to enforce the change necessary to achieve it.

Detail two or three findings or observations that surprised you. Describe how conducting this food waste audit has impacted you and your team, and the way you think about food in America.

1. Most people opened food but did not end up eating it instead of leaving it unopened and saving it for later. Even worse, people opted to throw out food that was unopened and uneaten instead of saving it. We were thus shocked by how wasteful people could be. We personally felt, especially in our very politically conscientious community, that people would be more aware of waste and hunger issues. Nonetheless, students still shocked us with how much food, especially unopened and uneaten, that they wasted. As a team, we have realized the importance of saving food and donating food to those in need.

2. We were also surprised at how heavy the food waste was and how much waste we ended up collecting. This audit just further proved to us how wasteful America is as a whole. It was definitely humbling to know how much waste we created in just one day at one high school, so extrapolating that to multiple days in a year to everyone in America is a lot of waste. We now feel much more aware of just how much food and other materials we waste since we were able to see and collect it in person.

What is one obstacle your team faced during the audit and how did you work to resolve it? If the issue went unresolved, what steps would you take to reevaluate your approach?

The biggest obstacle we faced was dealing with the sheer amount of trash we had to collect, particularly at the end of lunch. We were very flustered at the end of the first lunch and did not know how to deal with the massive influx of trash but we also did not want to force students into a line and make them late to class. Because of the massive pile up, we also spotted some students just throwing away all of their trash in the trash cans on the side that we tried to hide. To solve these issues, we stationed people near the trash cans so students would not be able to throw their food away; however, we also had to go through and collect the trash that had already been thrown away and sort it into the buckets. To remedy the massive student inflow, we decided to let students pile their trash on the table and we went through the trash in between lunch periods. If we were to conduct another food waste audit, we would definitely encourage more students to throw away food as they finish and also move about the cafeteria collecting trash from students at tables.

Bonus Question

Should all schools be required to do food waste audits on a regular basis? Why or why not?

Support your answer.

Schools should absolutely be required to regularly conduct food waste audits to track the progress in reducing waste. This will illuminate the effectiveness of potential new policies and procedures in reducing food and other waste. Additionally, food waste audits can be done for free by offering student volunteers service hours or points for clubs and honor societies. Involving students will also raise awareness of the waste they create, which will likely change their attitudes towards disposing of waste in the future as it did for our team and the students involved. In addition, schools should not only just conduct audits, but also separate out the trash to recycle, reuse, compost, or even donate in the case of unopened food items.